MEMORANDUM

TO:        Board of Trustees
THROUGH:   Steven J. Pinkerton
           General Manager
FROM:      Joseph J. Pomroy, P.E.
           Director of Public Works
SUBJECT:   Review, discuss and possibly authorize a Design
           Services Contract for the Water Resource Recovery
           Facility Aeration System Improvements Project – Fund:
           Utility; Division: Sewer; Vendor: CH2M Hill, Inc. in the
           amount of $80,000
STRATEGIC PLAN:    Long Range Principle #5 – Assets and Infrastructure
DATE:       November 30, 2018

I. RECOMMENDATION

That the Board of Trustees moves to:

1. Authorize a design services contract with CH2M Hill, Inc. (CH2M) totaling
   $80,000 for engineering design services and bid period assistance for the

2. Authorize Staff to execute the contract documents.

II. DISTRICT STRATEGIC PLAN

Long Range Principle #5 – Assets and Infrastructure – The District will practice
perpetual asset renewal, replacement, and improvement to provide safe and
superior long term utility services and recreation activities.

- The District will maintain, renew, expand, and enhance District infrastructure
to meet the capacity needs and desires of the community for future
   generations.
• The District will maintain, procure, and construct District assets to ensure safe and accessible operations for the public and the District’s workforce.

III. BACKGROUND

The District’s Water Resource Recovery Facility (WRRF) processes the raw sewage collected from Incline Village and Crystal Bay into treated wastewater effluent for disposal at the District’s Wetlands Facility in the Carson Valley. Constructed in 1962 and upgraded multiple times since, the WRRF utilizes multiple processes and mechanical systems to safely treat raw sewage to federal and state standards consistent with the requirements of the District’s Nevada Department of Environmental Protection (NDEP) operating permit.

The aeration process at the WRRF supplies oxygen to facilitate the biological activity that converts the raw sewage into stabilized organic material. The WRRF has six 200,000 gallon aeration basins with two jet aeration clusters per basin. These clusters utilize low pressure air to mix and recirculate the wastewater and provide the necessary oxygen to the microorganisms that provide the treatment of the raw sewage. The low pressure air system consists of three multi-stage centrifugal blowers that feed into a common piping header that supply the aeration clusters in the six aeration basins.

The low pressure air system and associated three multistage centrifugal blowers, controls, and mechanical appurtenances was installed during the last major WRRF upgrade completed in 1992. The system is largely at the end of its useful operational life and the three blowers and controls are no longer supported by the manufacturer.

In late 2016, the District experienced an unexpected failure in one of the three multistage centrifugal blowers. The blower was removed and shipped to the manufacturer’s authorized service facility for the region where it was determined the failure was catastrophic. Additionally, parts that may have allowed reconstruction and rebuilding of the blower are no longer available from the manufacturer. The WRRF now has two functional blowers. As the WRRF now requires one of the two blowers operating in order to supply enough air to meet system demands during the summer month. An additional blower failure would place the WRRF in a critical state.

The District has planned a multi-year aeration system improvements project within the Capital Improvement Program for a number of years to address the aging
infrastructure and operational challenges associated with the system. Earlier phases of the project were completed in 2016-17. The pre-design completed in 2018, conducted a comprehensive evaluation of the aeration system’s mechanical equipment, piping, controls, and structures; current process performance and energy usage; as well as current industry best practices and technologies; and made recommendations for system improvements.

CH2M has completed the technical memorandum for the aeration upgrades, which is the basis of design for the comprehensive aeration system improvements. CH2M will be responsible for all engineering design related to the next phase of the multi-year WRRF Aeration System Improvements. Conceptual and schematic design was completed in October 2018.

Design drawings, construction estimate and construction document design will begin upon authorization of the contract with a tentative finish of construction bid documents in August 2019 with the goal of bidding the construction contract in September of 2019. The project is anticipated to begin construction in late 2019 and be completed by the end of spring 2020. This schedule is intended to be constructed during the winter months when demands on the WRRF aeration system are at their lowest. The cost estimate will also be utilized to update the 2019-20 Capital Improvement Budget.

IV.  BID RESULTS

This item is not subject to competitive bidding within the meaning of Nevada Revised Statute (NRS) 332.115 as described in subsection (b) Professional Services.

Additionally, per NRS 625.530, selection of a professional engineer or registered architect to perform work on public works projects (where the complete project costs exceed $35,000) is to be made solely on the basis of the competence and qualifications of the engineer or architect and not on the basis of competitive fees.

V.  FINANCIAL IMPACT AND BUDGET

A total of $50,000 was carried forward from 2017/2018 CIP budget year and $100,000 is included in the 2018/2019 CIP budget under the WRRF Aeration System Improvements Project for a total budget of $150,000. (see attached data sheet) The predesign effort was funded under this CIP. There is currently $114,000
available to complete the Design contract for $80,000 and is within the project budget.

VI. ALTERNATIVES

None. The District must move forward with the improvements to the WRFF low pressure air system in order to ensure continuous and reliable wastewater treatment operations; avoid violating the District's NDEP operating permit and the resulting fines; as well as negatively impacting the environment.

VII. BUSINESS IMPACT

This item is not a "rule" within the meaning of Nevada Revised Statutes, Chapter 237, and does not require a Business Impact Statement.
Task Order No. 30
Incline Village General Improvement District
WRRF Aeration Improvements – Final Design Services

This document presents Task Order No. 30 to the AGREEMENT FOR DESIGN SERVICES between Incline Village General Improvement District (IVGID or OWNER) and CH2M HILL, Inc. (ENGINEER), dated July 31, 2009. Task Order No. 30 includes engineering design and bid document preparation for aeration improvements at the IVGID Water Resources Reclamation Facility (WRRF) (hereinafter referred to as the “Project”).

Scope of Professional Services

The scope of engineering services for the final design phase of the Project includes engineering analysis, calculations, equipment selection, Drawing development, Specification Development, and quality control review. Final design will follow a multistage delivery system consisting of milestone deliverables sent to IVGID for review and comment. Stages and associated deliverables are as follows:

- **60% Design:**
  - Design Drawings consisting of General, Demolition, Structural, Mechanical, Electrical, and Instrumentation/Controls
  - Specification table of contents for front end and technical specifications
    - Key specifications sections, such as the blower design specification
  - Revisions and updates, as applicable, to the basis of design report

- **90% Design:**
  - Detailed design Drawings consisting of General, Demolition, Structural, Mechanical, Electrical, and Instrumentation/Controls
  - Fully developed front end and technical specifications
  - Class 3 Construction Cost estimate for budgetary planning

- **Bid Documents:**
  - Sealed and signed detailed design Drawings consisting of General, Demolition, Structural, Mechanical, Electrical, and Instrumentation/Controls
  - Sealed and signed front end and technical specifications

- **Bid Support**
  - Engineer will formally respond to a maximum of ten contractor/bidder questions
  - Engineer will prepare and issue one Bid Document Addenda, as applicable and if needed.

A preliminary drawing list is presented in the following table:
<table>
<thead>
<tr>
<th>Discipline/Technology</th>
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<tbody>
<tr>
<td>General</td>
<td>COVER SHEET AND DRAWING INDEX</td>
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<td>Mechanical</td>
<td>PLAN – AERATION PIPING</td>
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<td>Standard Details</td>
<td>STANDARD DETAILS</td>
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ENGINEER will provide project management services for the Project including participating in coordination conference calls and meetings with IVGID, status reporting and invoicing, scheduling, and quality control reviews.

**Deliverables**

- Deliverables will be in PDF format and delivered by email to IVGID.

**Compensation and Budget**

A budgetary amount of $80,000 is hereby established for services for Task Order 30. Compensation by OWNER to ENGINEER will be cost reimbursable Per Diem (time and expense) as defined in the existing fully executed agreement. ENGINEER will complete the work within the budget.

Amount invoiced each month will be based on time and expenses expended to date. Invoices shall be accompanied by a listing of charges that make up the invoice total, including employee names, billing rates, and hours of Project staff, plus direct expenses.
Schedule

Proposed schedule is as follows:

- Notice to proceed: January 10, 2019
- 60% Design to IVGID: April 12, 2019
- 60% Design review call with IVGID: April 26, 2019
- 90% Design to IVGID: June 12, 2019
- 90% Design review call with IVGID: June 21, 2019
- Bid documents to IVGID: August 21, 2019
- Anticipated bid award: October 16, 2019

IN WITNESS WHEREOF, the parties hereto have caused this Task Order No. 30 to be signed and intend to be legally bound thereby.

OWNER:
INCLINE VILLAGE GENERAL IMPROVEMENT DISTRICT
Agreed to:
By:

Joseph J. Pomroy, P.E.
Director of Public Works

DATE: _________________________, 2018

Address for Giving Notice:
INCLINE VILLAGE G.I.D.
893 Southwood Boulevard
Incline Village, Nevada 89451

ENGINEER:
CH2M HILL, INC.
Agreed to:
By:

Brett M. Isbell, P.E.
Designated Manager

DATE: _________________________, 2018

Address for Giving Notice:
CH2M HILL, INC.
50 West Liberty Street, Suite 205
Reno NV 89501
Project Summary

Project Description

The Wastewater Resource Recovery Facility (WRWF) was constructed by Incline Village General Improvement District (IVCID) in 1962. Since that time, there have been several upgrades and process replacements/improvements to modernize the WRWF and replace aging infrastructure. The aeration process of wastewater treatment supplies oxygen to facilitate the biological activity that converts raw sewage into treated wastewater effluent. The plant has six 200,000 gallon aeration basins with two jet aeration clusters per basin. These clusters utilize pressurized air to mix and recirculate the wastewater and provide the necessary oxygen to the microorganisms. The pressurized air is delivered by multistage centrifugal blowers that are metered by electronically operated valves in order to keep the correct balance of oxygen in the aeration basins at all times.

Project Internal Staff

Staff involvement is the coordination and contracting of the removal, procurement, and replacement of equipment with new equipment.

Project Justification

This project funds the design and replacement of the aeration system equipment at the WRWF. The age of the equipment, the number of hours of operation, and condition assessment indicates the existing centrifugal blowers are at the end of their serviceable life. Additionally, the blowers are no longer supported by the manufacturer and replacement parts are difficult to acquire. The pre-design phase of this project will evaluate current blower and aeration technologies and will select the technology best suited to the conditions at the District's WRWF. The design phase of this project will assemble the plans and specifications to facilitate equipment acquisition and installation.

Forecast

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